

ABSTRACT

A plurality of heat transfer tube elements 17 are laminated with outer fins disposed between the heat transfer tube elements 17 in order to form a core. A gas flows between the outer fins. A passage 24 allowing flow of a cooling medium in a direction orthogonal to the direction of gas flow is formed in each heat transfer tube element 17. The passage 24 has a large passage 31 having a large width disposed upstream with respect to the direction of a gas flow and a small passage group 33 comprising a plurality of small passages 32 being more narrow than the large passage 31 and being disposed downstream with respect to the direction of gas flow. This arrangement allows non-uniformity in the temperature distribution of a gas flow to be suppressed to a low level with a downsizing, low-weight and low-cost device.